

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: **Chen et al.**

Serial No. **10/756,918**

Filed: **January 14, 2004**

For: **Method and Apparatus for  
Performing Handwriting Recognition  
by Analysis of Stroke Start and End  
Points**

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Group Art Unit: **2624**

Examiner: **Amara Abdi**

**Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**

**35525**  
PATENT TRADEMARK OFFICE  
CUSTOMER NUMBER

**APPEAL BRIEF (37 C.F.R. 41.37)**

This brief is in furtherance of the Notice of Appeal, filed in this case on January 9, 2008.

A fee of \$510.00 is required for filing an Appeal Brief. Please charge this fee to IBM Corporation Deposit Account No. 09-0447. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to IBM Corporation Deposit Account No. 09-0447. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to IBM Corporation Deposit Account No. 09-0447.

### **REAL PARTY IN INTEREST**

The real party in interest in this appeal is the following party: International Business Machines Corporation of Armonk, New York.

### **RELATED APPEALS AND INTERFERENCES**

This appeal has no related proceedings or interferences.

## **STATUS OF CLAIMS**

### **A. TOTAL NUMBER OF CLAIMS IN APPLICATION**

The claims in the application are: 1-12, 14, and 16-20

### **B. STATUS OF ALL THE CLAIMS IN APPLICATION**

Claims canceled: NONE;

Claims withdrawn from consideration but not canceled: 13 and 15;

Claims pending: 1-12, 14, and 16-20;

Claims allowed: NONE;

Claims rejected: 1-12, 14, and 16-20;

Claims objected to: NONE.

### **C. CLAIMS ON APPEAL**

The claims on appeal are: 1-12, 14, and 16-20

## **STATUS OF AMENDMENTS**

No amendments were submitted after the Final Office Action of October 24, 2007.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

### **A. CLAIM 1 - INDEPENDENT**

The subject matter of claim 1 is directed to a computer implemented method in a data processing system for performing handwritten character recognition. The method includes the computer implemented step of, responsive to user input to a pointing device entered through a computer interface (Specification p. 13, ll. 23-25; FIG. 3, 320), identifying a stroke start event and a stroke end event (Specification p. 12, ll. 11-15, p. 17, ll. 2-12; FIG. 3, 320; FIG. 5, 502-508). The method further includes the computer implemented step of deriving a stroke parameter from the stroke start event and the stroke end event (Specification p. 17, ll. 13-15; FIG. 3, 320; FIG. 5, 502-508). The method further includes the computer implemented step of transmitting the stroke parameter to a server concurrently with user input of a subsequent stroke (Specification p. 12, ll. 24-30; Specification p. 26, ll. 18-24; Specification, p. 20, ll. 17-28; FIG. 10A.). The method further includes the computer implemented step of receiving a candidate character from the server (Specification p. 12, ll. 20-24; Specification, p. 27, ll. 16-22; FIG. 10B), wherein the candidate character is based on the stroke parameter (Specification, p. 20, l. 29-p. 23, l. 2; FIG. 8).

### **B. CLAIM 9 - INDEPENDENT**

The subject matter of claim 9 is directed to a computer program product in a recordable-type medium for performing handwriting recognition. The computer program product includes first instructions for displaying a collection area in a computer interface (Specification, p. 18, ll. 19-23; FIG. 7, 402). The computer program product includes second instructions adapted to determine a start point and an end point of a stroke input into the collection area (Specification p. 12, ll. 11-15, p. 17, ll. 2-12; FIG. 3, 320; FIG. 5, 502-508). The computer program product includes third instructions, responsive to determining the start point and the end point, for calculating a stroke parameter set describing at least one attribute of the stroke (Specification p. 17, ll. 13-15; FIG. 3, 320; FIG. 5, 502-508). The computer program product includes fourth instructions for transmitting the stroke parameter set to a server concurrently with user input of a subsequent stroke (Specification p. 12, ll. 24-30; Specification p. 26, ll. 18-24; Specification, p. 20, ll. 17-28; FIG. 10A.). The computer program product includes fifth instructions for receiving a candidate character from the server (Specification p. 12, ll. 20-24; Specification, p. 27, ll. 16-22; FIG. 10B),

wherein the candidate character is based on the stroke parameter set (Specification, p. 20, l. 29-p. 23, l. 2; FIG. 8).

### **C. CLAIM 16 - INDEPENDENT**

The subject matter of claim 16 is directed to a data processing system. The data processing system includes a pointing device (Specification, p. 13, ll. 23-25; FIG. 1, 109), a display (Specification, p. 13, ll. 18-20; FIG. 1, 107), a memory that contains a set of instructions (Specification, p. 13, ll. 6-7; FIG. 3, 304), and a processing unit (Specification, p. 13, ll. 6-7; FIG. 3, 302). Responsive to executing the set of instructions, the processing unit provides a computer interface (Specification, p. 18, ll. 19-23; FIG. 7, 402) that identifies a start point and an end point of a handwritten character stroke input by the pointing device (Specification p. 12, ll. 11-15, p. 17, ll. 2-12; FIG. 3, 320; FIG. 5, 502-508), wherein a first stroke parameter set is calculated by the processing unit responsive to identifying the start point and the end point (Specification p. 17, ll. 13-15; FIG. 3, 320; FIG. 5, 502-508). The data processing system further includes a server (Specification, p. 15, l. 28-p. 16, l. 2; FIG. 1, 104). Responsive to calculating the first stroke parameter set, the server receives the first stroke parameter set from the processing unit concurrently with user input of a subsequent handwritten character stroke to the computer interface (Specification p. 12, ll. 24-30; Specification p. 26, ll. 18-24; Specification, p. 20, ll. 17-28; FIG. 10A.) and transmits a candidate character to the processing unit (Specification p. 12, ll. 20-24; Specification, p. 27, ll. 16-22; FIG. 10B). The candidate character is based on the first stroke parameter set (Specification, p. 20, l. 29-p. 23, l. 2; FIG. 8).

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to review on appeal are as follows:

### **A. GROUND OF REJECTION 1**

Whether claims 9-15 are directed to statutory subject matter under 35 USC §101.

### **B. GROUND OF REJECTION 2**

Whether claims 1, 3-4, 6-11, 14, 16-17, and 19-20 are patentable under 35 U.S.C. § 103 over *Ito et al.*, Character Input Apparatus/Method and Computer-Readable Storage Medium, U.S. Patent No. 6,694,056 (February 17, 2004) (hereinafter “*Ito*”) in view of *Bryborn et al.*, Electronic Pen and Method for Recording of Handwritten Information, U.S. Patent Publication No. 2003/0107558 A1 (June 12, 2003) (hereinafter “*Bryborn*”).

### **C. GROUND OF REJECTION 3**

Whether claim 2 is patentable over *Ito* in view of *Bryborn* and further in view of *Kannan et al.*, System to Service Processor Interface for a Tablet Computer, U.S. Patent No. 5,329,625 (July 12, 1994) (hereinafter “*Kannan*”).

### **D. GROUND OF REJECTION 4**

Whether claims 5, 12, and 18 are patentable over *Ito* in view of *Bryborn* and further in view of *Ilan et al.*, Handwritten Pattern Recognizer with Selective Feature Weighting, U.S. Patent No. 6,023,529 (February 8, 2000) (hereinafter “*Ilan*”).



## ARGUMENT

### **A. GROUND OF REJECTION 1 (Claims 9-15)**

The examiner rejected claims 9-15 under 35 U.S.C. § 101 as being directed towards non-statutory subject matter. Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

The rejection is incorrect in view of new guidelines covering patentability of claims directed to a process in a computer readable medium. The USPTO guidelines for evaluating computer-readable medium encoded with functional descriptive material, such as a computer program, expressly state that a claim to such computer-readable medium when so encoded is statutory subject matter. USPTO, *Interim Guideline for Examination of Patent Application for Patent Subject Matter Eligibility* (26 Oct. 2005) (hereinafter “The Guideline”). The Guideline provides, in relevant part:

“[A] claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.”

*Id.*, p. 52. The Guideline further provides:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O’Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

...

These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of § 101. Public comment is sought for further evaluation of this question.

*Id.*, pp. 55-56. Claim 9 is as follows:

9. A computer program product in a recordable-type medium for performing handwriting recognition comprising:
  - first instructions for displaying a collection area in a computer interface;
  - second instructions adapted to determine a start point and an end point of a stroke input into the collection area;

third instructions, responsive to determining the start point and the end point, for calculating a stroke parameter set describing at least one attribute of the stroke;  
fourth instructions for transmitting the stroke parameter set to a server concurrently with user input of a subsequent stroke; and  
fifth instructions for receiving a candidate character from the server, wherein the candidate character is based on the stroke parameter set.

Claims 9-15 are directed to a computer program product in a recordable-type medium. As the Guideline provides, “a computer readable medium with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized” is statutory. Because claims 9-15 recite a computer program product in a recordable-type medium, along with the other recited steps, claims 9-15 describe a data structure that defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized. Thus, claims 9-15 are patentable subject matter under 35 U.S.C. § 101, as explained under the Guideline.

In addition, the instant claims do not recite software per se. Rather, the claims recite a “recordable-type medium” in which a computer program product is embedded. Claims 9-15 claim functional descriptive material encoded on a recordable-type medium and do not claim software per se. For this reason, claims 9-15 thus fall under allowable statutory matter under 35 U.S.C. § 101. This assertion is fully supported by the specification that provides:

Examples of computer readable media include *recordable-type media*, **such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs**, and transmission-type media, such as digital and analog communications links, wired or wireless communications links using transmission forms, such as, for example, radio frequency and light wave transmissions. The computer readable media may take the form of coded formats that are decoded for actual use in a particular data processing system.

Specification, p. 33, ll. 10-19 (emphasis supplied).

The specification provides that computer readable media may be of two types, recordable-type media and transmission-type media. Claims 9-15 are directed to the transmission-type media. Transmission-type media *only* include tangible media. Because the claimed product is encoded on a physical recordable-type medium, the examiner’s assertion that the claims are directed to intangible media is plainly wrong.

Thus, based on the MPEP and applicable case law, claims 9-15 are statutory under 35 U.S.C. § 101. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 9-15 under 35 U.S.C. § 101.

**B. GROUND OF REJECTION 2 (Claims 1, 3-4, 6-11, 14, 16-17, and 19-20)**

The Examiner has rejected claims 1, 3-4, 6-11, 14, 16-17, and 19-20 as being obvious under 35 U.S.C. § 103 over *Ito et al.*, Character Input Apparatus/Method and Computer-Readable Storage Medium, U.S. Patent No. 6,694,056 (February 17, 2004) (hereinafter “*Ito*”) in view of *Bryborn et al.*, Electronic Pen and Method for Recording of Handwritten Information, U.S. Patent Publication No. 2003/0107558 A1 (June 12, 2003) (hereinafter “*Bryborn*”). Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

Claim 1 is representative of the group. Claim 1 is as follows:

1. A method in a data processing system for performing handwritten character recognition, the method comprising the computer implemented steps of:
  - responsive to user input to a pointing device entered through a computer interface, identifying a stroke start event and a stroke end event;
  - deriving a stroke parameter from the stroke start event and the stroke end event;
  - transmitting the stroke parameter to a server concurrently with user input of a subsequent stroke; and
  - receiving a candidate character from the server, wherein the candidate character is based on the stroke parameter.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In determining obviousness, the scope and content of the prior art are... determined; differences between the prior art and the claims at issue are... ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). “Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person

having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). “Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.* (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006)).”

To establish a *prima facie* case of obviousness, there must be an apparent reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings in the fashion claimed by the application at issue. Additionally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

With regard to claim 1, the Examiner states the following:

*Ito et al.* do not explicitly mention the transmitting of the stroke parameter to a server concurrently with the user input of a subsequent stroke, and receiving a candidate character from the server.

*Bryborn*, in analogous environment, teaches an electronic pen and method for recording of handwritten information, where the server has a transceiver for transmitting and receiving the stroke parameter (paragraph [0047], lines 6-23, and paragraph [0058], line 2, and paragraph [0078], line 1-13), where the user inputs the subsequent stroke (paragraph [0048], line 8-10, (the selecting of the desired property for subsequent stroke by the user on the input page is read as the same concept as the inputting by the user of subsequent stroke).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of *Bryborn*, where the server comprises a transceiver for transmitting and receiving a stroke information, in the system of *Ito et al.* in order to transfer all pen strokes input on the palette page to the server so that the latter is able to process (render) the pen strokes on the input pages in the correct way, with a short transmission times, and low power consumption in the pen (paragraph [0012], line 10-18).

Final Office Action dated October 24, 2007, pp. 3-4.

*Ito* teaches:

a character input apparatus comprising: a stroke dictionary in which sets of standard stroke information for a plurality of strokes are registered, each set of standard stroke information corresponding to a different stroke; a character dictionary in which stroke orders for a plurality of characters are registered, each stroke order corresponding to a

different character; a coordinate output unit operable to output, when a user inputs handwritten characters, a coordinate string, that is sets of coordinates of points, for each handwritten stroke composing the handwritten characters; a stroke matching unit operable to obtain stroke information for each handwritten stroke from the outputted coordinate string of the handwritten stroke, compare the stroke information with each set of standard stroke information registered in the stroke dictionary, and output stroke candidates; and a character detecting unit operable to search the character dictionary using an order of a group of stroke candidates obtained in inputted order by the stroke matching unit as a key and detect a character whose stroke order matches the order of the stroke candidates. With this construction, the apparatus is capable of detecting correct characters for handwritten characters drawn one after another in a single character input frame.

*Ito*, col. 1, l. 67-col. 2, l. 22.

The examiner has failed to state a *prima facie* obviousness rejection against claim 1 because neither *Ito* nor *Bryborn* teach the feature of “transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*” (emphasis added). As pointed out above, the Examiner admits that *Ito* does not disclose the transmitting of the stroke parameter to a server concurrently with the user input of a subsequent stroke, and receiving a candidate character from the server.

To overcome this deficiency, the examiner cites the following portions of *Bryborn* regarding this claimed feature:

A preferred embodiment of a system for electronic recording of handwritten or hand-drawn information is shown in FIG. 1. The system uses an electronic pen 10 which will be described in more detail with reference to FIGS. 2 and 4. When the user moves the pen 10 in desired pen movements 1 across a writing base, *the pen movements are recorded as a plurality of digital pen strokes which are stored locally in the pen in order to await subsequent transmission to a server 5* via a wireless communication link 4. To permit this recording, the writing base is provided with a position-coding pattern 20 which will be described in more detail with reference to FIG. 3. One possible application, among a large number of such applications, is one in which the graphical information input via the pen movements 1 is added to or enclosed with an e-mail message 6 which is transmitted via a wide area network 7 (WAN), for example the Internet, to a receiving computer 8 nominated by the person using the pen. For this purpose, the server according to FIG. 4 comprises a main processor (CPU) 27, a working memory (RAM) 28 connected thereto, a secondary memory 29, a transceiver 26 for wireless

communication with the pen 10 via the link 4, and a WAN interface 30 (for example a network card and/or other necessary equipment to be connected to the wide area network 7). In addition to storing the normal operating system, the secondary memory 29 also stores application software consisting of a set of program instructions which, when loaded into the working memory 28, can be executed by the main processor 27 in order to carry out the methods according to the invention described below.

*Bryborn*, paragraph [0047] (emphasis added).

The electronics part additionally comprises a combined transmitter and receiver (transceiver) 18 for transfer of information to or from a remote apparatus, such as a computer or mobile phone, but mainly for information transfer to the server 5. The combined transmitter and receiver 18 is advantageously adapted for short-range radio communication in accordance with the Bluetooth standard at 2.4 GHz on the ISM (Industrial, Scientific and Medical) frequency band. However, the combined transmitter and receiver can alternatively be adapted for infrared communication, such as IrDA (Infrared Data Association), or for cable-based communication (such as USB or RS232), or basically for any other available standard for short-range communication between a handheld device and a remote device.

*Bryborn*, paragraph [0058]

FIG. 5 illustrates a procedure for transmission of recorded pen strokes from the pen 10 to the server 5. In an initial step 41, *the transmission procedure is initiated by an active measure on the part of the user, for example by the latter using the pen 10 to cross or tick off a special SEND field on the current base 2 and/or ordering transmission using one of the buttons 19a*. Alternatively, the transmission could be initiated automatically, for example when a predetermined period of time has passed since a pen stroke was last input, or when the memory 16b in the pen 10 has reached a certain degree of filling. Step 41 is ended by the pen 10 sending a transmission request to the server 5 via the wireless link 4.

*Bryborn*, paragraph [0078]

*Bryborn* discloses an electronic pen for recording handwritten information. Pen strokes are stored within an internal memory on the pen until a current session is finished. As is made clear from the passages cited by the examiner, “*the pen movements are recorded as a plurality of digital pen strokes which are stored locally in the pen in order to await subsequent transmission to a server....*” Contrary to the Examiner’s assertion, *Bryborn* does not teach, in the cited

passages or elsewhere, that a stroke parameter is transmitted to the server concurrently with the entry of a subsequent stroke entry. In fact, the Examiner's cited paragraph [0047] states a diametrically opposed solution, namely that "the pen movements are recorded as a plurality of digital pen strokes which are stored locally in the pen in order to await subsequent transmission to a server."

Paragraph [0078], also cited by the Examiner again indicates that stroke information is transmitted completely separately from the input of additional strokes. Bryborn therein states that:

*the transmission procedure is initiated by an active measure on the part of the user, for example by the latter using the pen 10 to cross or tick off a special SEND field on the current base 2 and/or ordering transmission using one of the buttons 19a. Alternatively, the transmission could be initiated automatically, for example when a predetermined period of time has passed since a pen stroke was last input, or when the memory 16b in the pen 10 has reached a certain degree of filling.*

*Bryborn*, paragraph [0078]

By transmitting strokes to the server as they occur, the method of Applicants' claim 1 eliminates characters from the possible candidate characters before a user completes entry of the handwritten character. This allows the embodiment of claim 1 to determine characters faster than would otherwise be possible if the entirety of stroke parameters were "recorded as a plurality of digital pen strokes which are stored locally in the pen in order to await subsequent transmission to a server," as taught by *Bryborn*. Thus, *Bryborn* does not teach or suggest this claimed feature.

Because neither *Ito* nor *Bryborn* teach or suggest the feature of, "transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*," the examiner has failed to state a *prima facie* obviousness rejection against claim 1 in view of a combination of *Ito* and *Bryborn* considered as a whole. Therefore, the rejection of claim 1 under 35 U.S.C. § 103 is improper. Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

### C. GROUND OF REJECTION 3 (Claim 2)

The Examiner has rejected claim 2 as being obvious under 35 U.S.C. § 103 over *Ito* in view of *Bryborn* and further in view of *Kannan et al.*, System to Service Processor Interface for a Tablet Computer, U.S. Patent No. 5,329,625 (July 12, 1994) (hereinafter “*Kannan*”). Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

Claim 2 is as follows:

2. The method according to claim 1, wherein the stroke start event is a depression of a pointing device button, and the stroke end event is a release of the pointing device button.

With regard to claim 2, the examiner states:

*Ito et al.* and *Bryborn et al.* disclose all the subject matter as described in claim 1 above. *Ito et al.* and *Bryborn et al.* do not explicitly mention the method, where the stroke start event is a depression of a pointing device button, and the stroke end event is a release of the pointing device button.

*Kannan et al.*, in an analogous environment, teaches a system, comprising a pen or stylus used as the primary input device (column 1, line 43-45), (the primary input device is read as a pointing device). The pointing device includes a movable tip that closes the switch (column 2, line 65-67), (the movable tip that closes is read as pointing device button), the stylus generates a magnetic field that is picked up by the digitizer, so the digitizer can distinguish between "proximity" coordinate (switch open) (release of the pointing point button) and "pen down" coordinate (switch closed) (depression of a pointing device button) (column 3, line 1-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of *Kannan et al.*, where the stroke start event is a depression of a pointing device button, and the stroke end event is a release of the pointing device button, in the system of *Ito et al.* in order to make the handwriting recognition faster while permitting digitization to be done rapidly and in an efficient manner (column 1, line 57-59).

Final Office Action dated October 24, 2007, p. 13, ll. 3-19.

The combination of *Ito* in view of *Bryborn* does not render claim 2 obvious, because neither *Ito* nor *Bryborn* teach the feature of “transmitting the stroke parameter to a server concurrently with user input of a subsequent stroke” (emphasis added), contained within the independent claim from which claim 2 depends. Furthermore, *Kannan* does not cure this deficiency of *Ito* in view of *Bryborn*. *Kannan* teaches a digitizing tablet in a distributed



computing environment, wherein commands into the tablet are initiated and concluded by the depression and release of the tip of an associated stylus. However, *Kannan* does not overcome the above identified deficiency of *Ito* in view of *Bryborn* – namely, *Kannan* does not teach “transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*.”

Because none of *Ito*, *Bryborn*, or *Kannan* teaches or suggests the features “transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*,” the examiner has failed to state a *prima facie* obviousness rejection against claim 2 in view of a combination of *Ito*, *Bryborn*, and *Kannan*. Therefore, the rejection of claim 2 under 35 U.S.C. § 103 is improper. Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

#### **D. GROUND OF REJECTION 4 (Claims 5, 12 and 18)**

The examiner rejected claims 5, 12 and 18 under 35 U.S.C. § 103 as obvious over *Ito*, *Bryborn*, and *Ilan et al.*, Handwritten Pattern Recognizer with Selective Feature Weighting, U.S. Patent No. 6,023,529 (February 8, 2000) (hereinafter “*Ilan*”). Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

Claim 5 is representative of this group. Claim 5 is as follows:

5. The method according to claim 1, wherein the deriving step includes:  
calculating at least one of a stroke length, a stroke angle, and a stroke center for the stroke parameter.

With regard to claim 5, the examiner states:

*Ito et al.* and *Bryborn et al.* disclose all the subject matter as described in claim 1 above. *Ito et al.* and *Bryborn et al.* do not explicitly mention the method, where the deriving step includes the calculating of at least one stroke length, a stroke angle, and a stroke center for the stroke parameter.

*Ilan et al.*, in analogous environment, teaches a handwritten pattern recognition, where calculating the stroke parameter length (column 1, line 67), and a stroke angle (column 3, line 62-63), and a stroke center for the stroke parameter (column 6, line 42-43).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of *Ilan et al.*, where calculating at least one stroke length, a stroke angle, and a stroke center for the stroke parameter, in the system of *Ito et al.* in order to provide a handwritten pattern recognition system having a plurality of parameter determining units, each determining the value of a desired parameter for an input pattern to be recognized (column 2, line 15-18).

Final Office Action dated October 24, 2007, p. 14, ll. 7-19.

The combination of *Ito* in view of *Bryborn* does not render claims 5, 12 and 18 obvious because neither *Ito* nor *Bryborn* teach the feature of “transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*” (emphasis added), contained within the independent claim from which claims 5, 12 and 18 depend. Furthermore, *Ilan* does not cure this deficiency of *Ito* in view of *Bryborn*. *Ilan* teaches a handwriting recognition system wherein a pattern match determiner produces match values for each parameter of an input pattern. Based on the match values for each parameter, the pattern match determiner produces an overall match value. A pattern classifier then selects a reference pattern whose parameter set most closely matches the overall matching value. However, *Ilan* does not overcome the above identified deficiency of *Ito* in view of *Bryborn* – namely, *Ilan* does not teach “transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*.”

Because none of *Ito*, *Bryborn*, or *Ilan* teaches the features “transmitting the stroke parameter to a server *concurrently with user input of a subsequent stroke*,” the examiner has failed to state a *prima facie* obviousness rejection against claim 5 in view of the combination of *Ito*, *Bryborn*, and *Ilan*. Therefore, the rejection of claims 5, 12 and 18 under 35 U.S.C. § 103 103 is improper. Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

**C. CONCLUSION**

As shown above, the examiner has failed to state valid rejections against any of the claims. Therefore, Applicants request that the Board of Patent Appeals and Interferences reverse the rejections.

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## **CLAIMS APPENDIX**

The text of the claims involved in the appeal is as follows:

1. A method in a data processing system for performing handwritten character recognition, the method comprising the computer implemented steps of:

responsive to user input to a pointing device entered through a computer interface,  
identifying a stroke start event and a stroke end event;

deriving a stroke parameter from the stroke start event and the stroke end event;

transmitting the stroke parameter to a server concurrently with user input of a subsequent stroke; and

receiving a candidate character from the server, wherein the candidate character is based on the stroke parameter.

2. The method according to claim 1, wherein the stroke start event is a depression of a pointing device button, and the stroke end event is a release of the pointing device button.

3. The method according to claim 1, wherein the step of identifying includes:

determining a first coordinate of a pointing device icon upon identifying the stroke start event, and determining a second coordinate of the pointing device icon upon identifying the stroke end event.

4. The method according to claim 1, wherein the deriving step includes:  
calculating a plurality of stroke parameters from the stroke start event and the stroke end event.
5. The method according to claim 1, wherein the deriving step includes:  
calculating at least one of a stroke length, a stroke angle, and a stroke center for the stroke parameter.
6. The method according to claim 1, further comprising:  
downloading a web page from the server.
7. The method according to claim 6, further comprising:  
receiving a match confirmation input indicating the candidate character corresponds to a character being input to the computer interface; and  
communicating the match confirmation input to the server.
8. The method according to claim 7, further comprising:  
responsive to communicating the match confirmation input to the server, receiving the candidate character from the server.
9. A computer program product in a recordable-type medium for performing handwriting recognition comprising:  
first instructions for displaying a collection area in a computer interface;

second instructions adapted to determine a start point and an end point of a stroke input into the collection area, the first instructions;

third instructions, responsive to determining the start point and the end point, for calculating a stroke parameter set describing at least one attribute of the stroke;

fourth instructions for transmitting the stroke parameter set to a server concurrently with user input of a subsequent stroke; and

fifth instructions for receiving a candidate character from the server, wherein the candidate character is based on the stroke parameter set.

10. The computer program product according to claim 9, wherein the computer interface includes a candidate display for displaying the candidate character received by the fifth instructions.

11. The computer program product according to claim 10, wherein the candidate character displayed in the candidate display is selectable by a user.

12. The computer program product according to claim 9, wherein the stroke parameter set includes a stroke length parameter, a stroke angle parameter and a stroke center parameter.

14. The computer program product according to claim 9, wherein the first instructions, responsive to a change in trajectory of the stroke input into the collection area of at least a trajectory threshold, determine a partition point, and wherein the stroke parameter set comprises a first stroke parameter set calculated from the start point and the partition point and a second stroke parameter set calculated from the partition point and the end point.

16. A data processing system comprising:

a pointing device;

a display;

a memory that contains a set of instructions;

a processing unit, responsive to executing the set of instructions, for providing a computer interface that identifies a start point and an end point of a handwritten character stroke input by the pointing device, wherein a first stroke parameter set is calculated by the processing unit responsive to identifying the start point and the end point; and

a server, responsive to calculating the first stroke parameter set, for receiving the first stroke parameter set from the processing unit concurrently with user input of a subsequent handwritten character stroke to the computer interface and transmitting a candidate character to the processing unit, wherein the candidate character is based on the first stroke parameter set.

17. The data processing system of claim 16, further comprising a network adapter for connecting the data processing system to a network computer, wherein the set of instructions is communicated to the data processing system responsive to connecting the data processing system with the network computer.

18. The data processing system according to claim 16, wherein the first stroke parameter set includes a length parameter, an angle parameter, and a center parameter.

19. The data processing system according to claim 16, wherein the processing unit, responsive to a change in trajectory of the pointing device of at least a trajectory threshold, calculates a second stroke parameter set.

20. The data processing system according to claim 16, wherein the computer interface includes a candidate display for displaying a candidate character identified by comparing the first stroke parameter set with a reference parameter set of a reference character dictionary.



## **EVIDENCE APPENDIX**

This appeal brief presents no additional evidence.

## **RELATED PROCEEDINGS APPENDIX**

This appeal has no related proceedings.